Amendments to the Claims

The listing of claims will replace all prior versions, and listings of claims in the application.

1. (Currently amended) A cable modem, comprising:

a media access control;

a receiver portion coupled to said media access control; and

a transmitter portion coupled to said media access control;

wherein said media access control is adapted to generate a registration message that indicates support for a ~~first protocol~~ plurality of protocol-specific header suppression techniques by the cable modem and wherein said transmitter portion is adapted to transmit said registration message to a cable modem termination system;

wherein said receiver portion is adapted to receive a response to said registration message from said cable modem termination system and to provide said response to said registration message to said media access control, said response to said registration message indicating whether or not ~~said first protocol~~ said plurality of protocol-specific header suppression techniques is supported by a cable modem termination system; and

wherein said media access control is further adapted to format data for transmission to said cable modem termination system in accordance with ~~said first protocol~~ a selected one of said plurality of protocol-specific header suppression techniques if said response to said registration message indicates said ~~first protocol~~ plurality of protocol-specific header suppression techniques is supported by said cable modem termination system, and to format data for transmission to said cable modem

termination system in accordance with a ~~second protocol~~ default header suppression technique if said response to said registration message indicates said ~~first protocol~~ plurality of protocol-specific header suppression techniques ~~is~~ are not supported by said cable modem termination system.

2. (Currently amended) The cable modem of claim 1, wherein said ~~first protocol is an extended protocol and said second protocol~~ default header suppression technique is a DOCSIS ~~protocol~~ header suppression technique.

3. (Cancelled).

4. (Original) The cable modem of claim 1, wherein said registration message is a DOCSIS REG-REQ message and wherein said response to said registration message is a DOCSIS REG-RSP message.

5. (Original) The cable modem of claim 1, wherein said data comprises a data packet.

6. (Currently amended) A cable modem termination system, comprising:

a media access control;

a memory coupled to said media access control;

a receiver portion coupled to said media access control; and

a transmitter portion coupled to said media access control;

wherein said receiver portion is adapted to receive a registration message from a cable modem and to provide said registration message to said media access control, said registration message designating ~~a first data transfer protocol~~ support for a plurality of protocol-specific header suppression techniques or ~~a second data transfer protocol supported~~ support for a default header suppression technique by said cable modem;

wherein said media access control is adapted to assign a cable modem identifier to said cable modem and to associate said cable modem identifier with a protocol indicator in said memory, said protocol indicator indicating ~~said data transfer protocol~~ support for said plurality of protocol-specific header suppression techniques or support for said default header suppression technique as designated by said registration message;

wherein said transmitter portion is adapted to transmit said cable modem identifier assigned by said media access control to said cable modem;

wherein said receiver portion is further adapted to receive a request for transmission opportunity from said cable modem and to provide said request for transmission opportunity to said media access control, said request for transmission opportunity including said cable modem identifier; and

wherein said media access control is further adapted to allocate a transmission opportunity to the cable modem in response to said request for transmission opportunity, to use said cable modem identifier from said request for transmission opportunity to access said protocol indicator in said memory, and to process data transmitted by said cable modem during said allocated transmission opportunity in accordance with ~~said first data transfer protocol~~ a selected one of said plurality of protocol-specific header suppression techniques if ~~said first data transfer protocol~~ support for said plurality of

protocol-specific header suppression techniques is indicated by said protocol indicator, and process data transmitted by said cable modem during said allocated transmission opportunity in accordance with said ~~second data transfer protocol~~ default header suppression technique if ~~said second data transfer protocol~~ support for said default header suppression technique is indicated by said protocol indicator.

7. (Currently amended) The cable modem termination system of claim 6, wherein said ~~first data transfer protocol is an extended protocol and said second data transfer protocol~~ default header suppression technique is a DOCSIS ~~protocol~~header suppression technique.

8. (Cancelled).

9. (Original) The cable modem termination system of claim 6, wherein said registration message is a DOCSIS REG-REQ message.

10. (Original) The cable modem termination system of claim 6, wherein said cable modem identifier is a DOCSIS Service ID.

11. (Original) The cable modem termination system of claim 6, wherein said memory is a read-only memory or a random access memory.

12. (Original) The cable modem termination system of claim 6, wherein said receiver portion is adapted to receive said request for transmission opportunity from said cable modem in the contention area of a first DOCSIS map allocation message, and wherein said media access control is adapted to allocate said transmission opportunity to said cable modem in a second DOCSIS map allocation message.

13. (Original) The cable modem termination system of claim 6, wherein said media access control is adapted to associate said cable modem identifier with said protocol indicator in said memory by storing said cable modem identifier and said protocol indicator as associated values in a look-up table in said memory, and wherein said media access control is adapted to use said cable modem identifier from said request for transmission opportunity to access said protocol indicator in said memory by using said cable modem identifier to access said protocol indicator in said look-up table in said memory.

14. (Currently amended) A method for transferring data between a cable modem and a cable modem termination system in a cable modem system, comprising:

sending a registration message to the cable modem termination system, wherein said registration message indicates support for a ~~first protocol~~ plurality of protocol-specific header suppression techniques by the cable modem;

receiving a response to said registration message from the cable modem termination system, wherein said response to said registration message indicates whether

or not said ~~first protocol~~ plurality of protocol-specific header suppression techniques is supported by the cable modem termination system;

formatting data for transmission to the cable modem termination system in accordance with ~~said first protocol~~ a selected one of said plurality of protocol-specific header suppression techniques if said response to said registration message indicates said ~~first protocol is~~ plurality of protocol-specific header suppression techniques are supported by the cable modem termination system; and

formatting data for transmission to the cable modem termination system in accordance with a ~~second protocol~~ default header-suppression technique if said response to said registration message indicates said ~~first protocol is~~ plurality of protocol-specific header suppression techniques are not supported by the cable modem termination system.

15. (Currently amended) The method of claim 14, wherein said ~~first protocol is an extended protocol and said second protocol~~ default header suppression technique is a DOCSIS ~~protocol~~header suppression technique.

16. (Cancelled).

17. (Original) The method of claim 14, wherein said registration message is a DOCSIS REG-REQ message and wherein said response to said registration message is a DOCSIS REG-RSP message.

18. (Original) The method of claim 14, further comprising:

sending a request for transmission opportunity to the cable modem termination system;

receiving a transmission opportunity in response to said request for transmission opportunity;

transmitting said formatted data to the cable modem termination system during said received transmission opportunity.

19. (Original) The method of claim 14, further comprising:

receiving said data from a user device prior to formatting said data for transmission to the cable modem termination system.

20. (Original) The method of claim 14, wherein said data comprises a data packet.

21. (Currently amended) A method for data transfer in a cable modem system including a cable modem termination system and a cable modem, comprising:

receiving a registration message from a cable modem, wherein said registration message designates support for a plurality of protocol-specific header suppression techniques or support for a default header suppression technique ~~a first data transfer protocol or a second data transfer protocol supported~~ by said cable modem;

assigning a cable modem identifier to said cable modem and transmitting said cable modem identifier to said cable modem;

associating said cable modem identifier with a protocol indicator in memory, wherein said protocol indicator indicates ~~said data transfer protocol~~ support for said plurality of protocol-specific header suppression techniques or support for said default header suppression technique as designated by said registration message;

receiving a request for transmission opportunity from the cable modem, wherein said request for transmission opportunity includes said cable modem identifier;

allocating a transmission opportunity to the cable modem in response to said request for transmission opportunity;

using said cable modem identifier from said request for transmission opportunity to access said protocol indicator in said memory;

processing data transmitted by the cable modem during said allocated transmission opportunity in accordance with ~~said first data transfer protocol~~ a selected one of said plurality of protocol-specific header suppression techniques if ~~said first data transfer protocol~~ support for said plurality of protocol-specific header suppression techniques is indicated by said protocol indicator; and

processing data transmitted by the cable modem during said allocated transmission opportunity in accordance with said ~~second data transfer protocol~~ default header suppression technique if ~~said second data transfer protocol~~ support for said default header suppression technique is indicated by said protocol indicator.

22. (Currently amended) The method of claim 21, wherein said ~~first data transfer protocol is an extended protocol and said second data transfer protocol~~ default header suppression technique is a DOCSIS ~~protocol~~header suppression technique.

23. (Cancelled).

24. (Original) The method of claim 21, wherein said registration message is a DOCSIS REG-REQ message.

25. (Original) The method of claim 21, wherein said cable modem identifier is a DOCSIS Service ID.

26. (Original) The method of claim 21, wherein said receiving a request for transmission opportunity from the cable modem comprises receiving a request for transmission opportunity in the contention area of a first DOCSIS map allocation message, and wherein said sending a transmission opportunity to the cable modem in response to said request for transmission opportunity comprises allocating a transmission opportunity to the cable modem in a second DOCSIS map allocation message.

27. (Original) The method of claim 21, wherein said associating said cable modem identifier with a protocol indicator in memory comprises storing said cable modem identifier and said protocol indicator as associated values in a look-up table in said memory and wherein said using said cable modem identifier from said request for transmission opportunity to access said protocol indicator in said memory comprises using said cable modem identifier to access said protocol indicator in said look-up table in said memory.